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Attorney Docket Number: 24061.39 / 2003-0030
Customer No. 42717

Listing of Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method of manufacturing a microelectronics device, comprising:
providing a substrate having an active layer, a dielectric layer and a structural layer, wherein the active layer is formed over the dielectric layer and the dielectric layer is formed over the structural layer;
forming an opening through the active layer thereby exposing a surface of the dielectric layer and defining active layer sidewalls;
cleaning the exposed surface of the dielectric layer, wherein the cleaning includes plasma cleaning employing an etch chemistry containing at least one of fluorine and a fluorine-containing gas, and then
forming a spacer covering a first portion of the cleaned, exposed dielectric layer surface and substantially spanning one of the active layer sidewalls; and
forming a gate electrode over the active layer.

2. (Currently Amended) The method of claim 1 further comprising forming an etch stop layer over the active layer, wherein the opening is formed through the active layer and the etch stop layer thereby defining etch stop layer sidewalls substantially aligned with the active layer sidewalls, wherein the spacer substantially spans one of the active layer sidewalls and one of the etch stop layer sidewalls, and wherein the cleaning is performed after forming the opening through the active layer and the etch stop layer and before forming the spacer.

3. (Cancelled).

4. (Currently Amended) The method of claim ~~[[3]]~~ 1 wherein the cleaning further includes chemical etching with an etchant chemistry comprising hydrofluoric acid.

Claims 5 and 6. (Cancelled).

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7. (Currently Amended) The method of claim [[3]] 1 wherein the cleaning further includes vapor etching.

8. (Cancelled).

9. (Original) The method of claim 1 further comprising forming a silicide layer over the active layer.

10. (Original) The method of claim 1 wherein the spacer comprises silicon dioxide.

11. (Original) The method of claim 1 wherein the active layer comprises strained silicon.

12. (Original) The method of claim 1 wherein the active layer has a thickness ranging between about 100 Angstroms and about 1000 Angstroms.

13-24. (Cancelled).

25. (Currently Amended) A method of manufacturing a microelectronics device, comprising:
providing a substrate having:

a structural layer;

a dielectric layer located on the ~~dielectric~~ structural layer; and

an active layer located on the dielectric layer;

forming an opening through the active layer thereby exposing a surface of the dielectric layer and defining active layer sidewalls;

cleaning the exposed surface of the dielectric layer, wherein the cleaning includes plasma cleaning employing an etch chemistry containing at least one of fluorine and a fluorine-containing gas, and then
forming a spacer covering at least a portion of the cleaned, exposed dielectric layer surface and spanning at least a portion of the active layer sidewalls; and

forming a gate electrode on the active layer.

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26. (Currently Amended) The method of claim 25 further comprising forming an etch stop layer over the active layer, wherein the opening is formed through the active layer and the etch stop layer thereby defining etch stop layer sidewalls substantially aligned with the active layer sidewalls, wherein the spacer substantially spans one of the active layer sidewalls and one of the etch stop layer sidewalls, and wherein the cleaning is performed after forming the opening through the active layer and the etch stop layer and before forming the spacer.

27. (Cancelled).

28. (Currently Amended) The method of claim ~~[[27]]~~ 25 wherein the cleaning further includes chemical etching with an etchant chemistry comprising hydrofluoric acid.

29. (Currently Amended) The method of claim ~~[[27]]~~ 25 wherein the cleaning further includes ~~at least one of plasma etching and vapor etching.~~

30. (Canceled).

31. (Previously Presented) The method of claim 25 further comprising forming a silicide layer over the active layer.

32. (Previously Presented) The method of claim 25 wherein the spacer comprises silicon dioxide.

33. (Previously Presented) The method of claim 25 wherein the active layer comprises strained silicon.

34. (Previously Presented) The method of claim 25 wherein the active layer has a thickness ranging between about 100 Angstroms and about 1000 Angstroms.

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Claims 35-37. (Cancelled).

38. (New) The method of claim 1 wherein the active layer comprises a silicon layer, a silicon germanium layer, and a strained silicon layer, wherein the silicon germanium layer is located over the silicon layer, and wherein the strained silicon layer is located over the silicon germanium layer.

39. (New) The method of claim 1 wherein the active layer comprises a plurality of layers including a strained silicon layer.

40. (New) The method of claim 1 wherein the active layer comprises a plurality of layers.

41. (New) The method of claim 25 wherein the active layer comprises a silicon layer, a silicon germanium layer, and a strained silicon layer, wherein the silicon germanium layer is located over the silicon layer, and wherein the strained silicon layer is located over the silicon germanium layer.

42. (New) The method of claim 25 wherein the active layer comprises a plurality of layers including a strained silicon layer.

43. (New) The method of claim 25 wherein the active layer comprises a plurality of layers.